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Taxonomic status of *Carex microglochin* Wahlenb. (Cyperaceae).

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Carex microglochin（カヤツリグサ科）の分類学上の位置

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Differences among the genera of *Uncinia, Carex* and *Kobresia* in Caricoideae, Cyperaceae, are discussed in relation to the taxonomy of *Carex microglochin* Wahlenb. A description of the species is given based on a specimen collected in Kunlun Mountains, Xinjiang, China in 1988.

In 1988 Wu and Ohba had an opportunity to make a field survey in the north side of central and eastern Kunlun Mountains, Xinjiang Uygur Autonomous Province, China in connection with Qingzang Plateau Comprehensive Scientific Researches organized by Academia Sinica. During that time we had a chance to collect *Carex microglochin* in a marsh meadow located at an elevation of 3740 m. The species adds interest to our study of *Kobresia.*

Carex microglochin was described in 1803 by Wahlenberg. It has a wide distribution range covering the arctic-alpine regions including Himalaya and China. This species was a matter of controversy since a long time when Clarke (1883) discussed it in his paper 'On *Hemicarex* Benth., and its allies.' Clarke (1883) wrote: "had *C. microglochin* been found in the southern Hemisphere instead of the northern, authors would have placed it without hesitation in *Uncinia*", and he treated it as *U. microglochin.*

The genus *Uncinia* Pers., consisting of 35 species distributed mainly in Malesia, Pacific islands, C and S America, Indian and Atlantic Oceans (Mabberley 1987), is very close to *Carex* in having similar prophyll character, which is closed to form an utricle. But in *Uncinia* the prominently developed sterile rachilla of the female spikelet has hooked tip (Fig. 1a), while such hooked tipped rachilla is not found in *Carex* (1b & c). *Carex microglochin* has a prominently developed sterile rachilla protrudes out of the prophyll, but the tip is not hooked as in *Uncinia* although in some cases slightly bent tip is sometimes found (Fig. 1g & h).

Recently Liu *et al.* (1979) transferred the species from *Carex* to *Kobresia* and named *K. microglochin* (Wahlenb.) Wang et Tang, while 'An

Enumeration of the Vascular Plants of Tibet' (Anonymous 1989) used the name *Kobresia microglochin* (Wahlenb.) Wang et Tang ex Y. C. Yang for it.

Kobresia, consisting of nearly 50 species distributed mainly in the Himalaya, China and the central Asiatic region, belongs to the subfamily Caricoideae which also includes *Carex* and *Uncinia.* The character which distinguishes *Kobresia* from both these genera is the prophyll which opens on one side from the above towards the base and with bisexual as well as unisexual

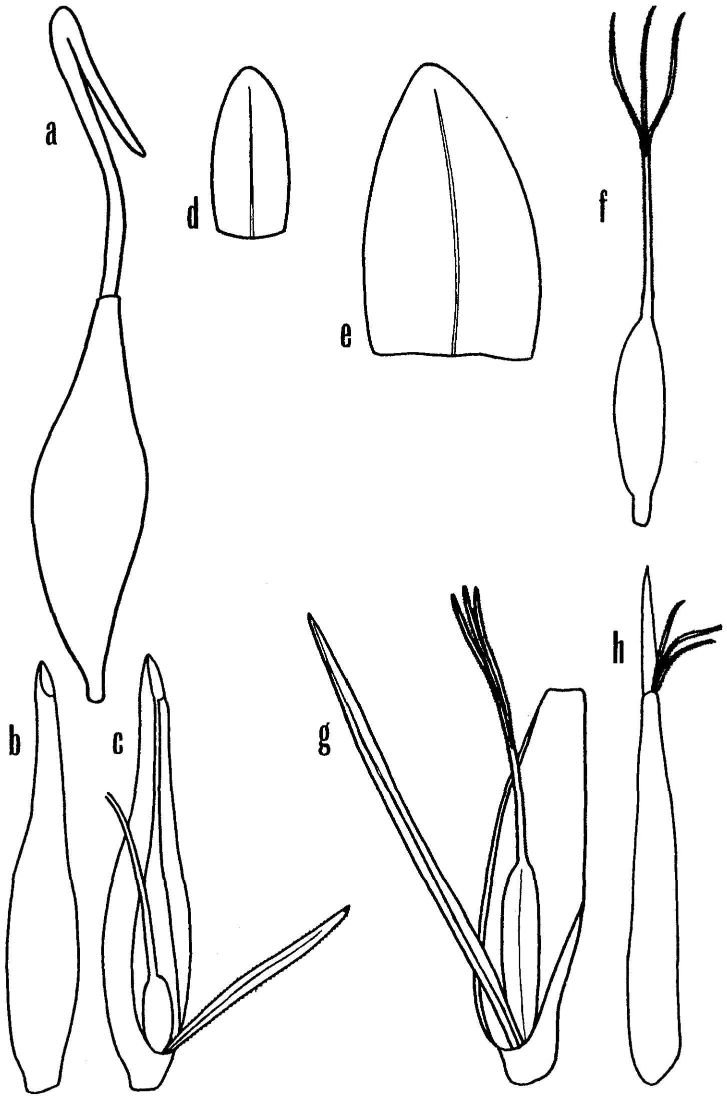

Fig. 1. *Unicinia uncinata* (a), *Carex parva* (b & c) and *C. microglochin* (d–h). a: utriclar prophyll with hooked sterile rachila. b: utricular prophyll. c: involved female flower and sterile rachilla in prophyll (the prophyll opened out). d. glume of male spikelet. e: glume of female spikelet. f: pistil. g: involved female flower and sterile rachilla in prophyll (the prophyll opened out). h: abaxial view of female flower enveloped in prophyll except stigma and apical part of sterile rachilla. ×20 [a: Fosberg 30241. b & c: Kanai et al. 25317. d–h: Wu et al. 3888.]

spikelets. The spikelet of *Carex* and *Uncinia* is always unisexual. In *Kobresia,* sometimes sterile rachilla of the female spikelets is prominently developed, such as in *K. curvata* (Boott) Kükenthal, *K. laxa* Nees and *K. uncinoides* (Boott) C. B. Clarke (Rajbhandari and Ohba, in press). But in these species the margins of the prophyll is opened on one side at the apical part from the above downwards, although the opening in some cases is only slight. No such opening of the margins of prophyll is found in case of *Carex microglochin.*

Koyama (1961) considered *Uncinia* to be different from *Carex* only by the presence of the remaining rachilla, and united two in a single genus. He considered the hooked rachilla to be one of two characteristics to suggest that *Uncinia* is not a prototypic but an ultimate sate on a small side branch sprung from so-called proto-*Carex.* He, however, brought forward evidence to show its derivative. We consider that the hooked structure of sterile rachillas in female spikelets is a peculiar character of *Unicinia,* and *Uncinia* is generically separable from *Carex* by this character. The prophyll character of *C. microglochin* is not different from that of *Carex.* Thus, we consider that the species belongs to *Carex* not to *Kobresia* and *Uncinia.*

Carex parva Nees mostly resembles *C. microglochin* in having a single terminal spike and prominent sterile rachilla in the female spikelet (Fig. 1b & c), but differs in length of the prophyll and sterile rachilla. The prophyll of *C. parva* is 5.8–6.0 mm long and rachilla 3.3–3.4 mm long which is included in the prophyll versus the prophyll 5.1–5.3 mm long and the protruding rachilla 6.4–6.6 mm long of *C. microglochin. Carex parva* has partly sympatric range with *C. microglochin* and is distributed in C Asia, Himalaya, Tibet and C China (Koyama 1978).

Taxonomic treatment

Carex microglochin Wahlenb. in Kungl. Svenska Vetensk. Akad. Handl. nov. ser. **24:** 140 (1803). C.B. Clarke in Hook.f., Fl. Brit. Ind. **6:** 711 (1894). T. Koyama in Hara, Fl. E. Himal. 383 (1966); [Fig. 1d–h] in Hara et al., Enum Flow. Pl. Nepal **1:** 104 (1978). [Fig. 1d–h]

Uncinia microglochin (Wahlenb.) Spreng., Syst. Veg. **3:** 830 (1826). C.B. Clarke in J. Linn. Soc. **20:** 401 (1883), as *U. microglochin* (Spreng.).

Kobresia microglochin (Wahlenb.) Tang et W.T. Wang in Rep. Bot. Zool. Invest. Ali Reg., Xizang (Tibet), 101 (1979), nom. seminud., without basionym ref.; An Enum. Vasc. Plants Xizang 419 (1980), as *K. microglochin* (Walenb.) Tang et Wang ex Y.C. Yang, nom. nud.

[Description based on our Kunlun material]

Perennial. Rhizome short, slender. Culms 4–12 cm high, 0.5–0.7 mm broad, slender. Leaves equalling or shorter than culms, setaceous, 0.5–1 mm wide.

Spike single, terminal, 0.5–1 cm long, with female spikelets below and male spikelet above. Glumes of female spikelets ovate, obtuse, 3.6–3.8 mm long, 2.2–2.3 mm wide, 1-nerved, glabrous, brown. Prophylls 5.1–5.3 mm long, 0.6–0.7 mm wide, lanceolate, glabrous, striate, deflexed when mature, beak terete, mouth entire. Styles 2.2–2.3 mm long, 3-fid. Young nut oblong-ellipsoid. Sterile rachillas 6.4–6.6 mm long, 0.3 mm wide, protruding out of the prophyll, linear, acuminate, 1-nerved, glabrous, green. Male glumes elliptic-oblong, obtuse, 2.2–2.4 mm long, 1–1.1 mm wide, glabrous, brown. Stamens 3; filaments 4–4.2 mm long, slender; anthers 2.1–2.3 mm long.

Collected specimen. CHINA, XINJIANG. Kunlun Mountains: Ruoquiang Pref., Yaziquan, 3740 m, Aug. 7, 1988 (S. G. Wu, H. Ohba, Y. H. Wu and Fei no. 3888, KUN,TI).

The plants were not so common there. During three months of our trip which included about 50 days above 3500 m elevation this species was collected only once.

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要旨

著者のうち武と大場は1988年に中部・東部崑崙山脈北側の植物相を調査する機会に恵まれた．その折，別途進めていたヒゲハリスゲ属（*Kobresia*）の研究で検討が必要と考えていた*Carex microglochin*を若羌県の海抜3740m地点にある鴨子泉で見いだした．

*Carex microglochin*は研究者により，*Uncinia*属，ヒゲハリスゲ属，スゲ属に分類される．その原因は雌性小穂と不稔小穂軸（sterile rachilla）を抱く前出葉をめぐる解釈の違いにある．*Carex microglochin*の前出葉はスゲ属と*Uncinia*の種に特徴的な嚢果状utriculateであり，ヒゲハリスゲ属のように一片で裂けてはいない．

不稔小穂軸は*Uncinia*ばかりか，ヒゲハリスゲ属，スゲ属の種にも存在する．しかし，*Uncinia*のそれは先端部が鉤状となる．これは他の2属にはみられない*Uncinia*の特徴である．*Carex microglochin*の不稔小穂軸はしかしながら先端部が鉤状とはならない．この点で本種は明らかに*Uncinia*とは異なっている．*Carex microglochin*の前出葉は完全な嚢果状で，どこにも裂け目がない．したがって，本種は主にヨーロッパの研究者が行ってきたように，スゲ属の種とみるのが正しいと結論された．